Modern Interpretation of TCM Theory

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Introduction: Despite of the growing interest in Traditional Chinese Medicine (TCM) it has not yet been integrated into the mainstream healthcare system. The main obstacle for this integration is the difference of views on the nature of human organism, methods of diagnostics and treatment, as well as vague terms used in TCM.

Do we need to preserve the original TCM lingo or it is possible to match the TCM terms with their equivalents in modern medicine? Can a Western doctor apply such terms as Yin and Yang, Five Elements, Excess/Deficiency, Heat, or Wind in his daily acupuncture practice?

Analyzing the terms used in TCM we realize that they first appeared in the ancient oriental philosophy and had very broad meanings. In addition, we think that theory of TCM can be represented as a simple mathematical model, which shows general laws of relationship between physiological and pathological process in human organism.

Acupoints, Channels and Organs: The main aspects of Acupoints, Channels and Organs have been already described in the article “Modern View on the Theory of Channels, Collaterals and Organs”.[1] We repeat our idea shortly again: it is suggested that through the theory of “Channels and Collaterals,” ancients Chinese doctors described physiology and pathology of intercellular spaces as well as body cavities and by the theory of “Zang and Fu Organs,” they described cellular physiology and pathology. System of Acupoints is a part of the channels, in other words it is a part of intercellular spaces. Due to morphologic and functional complexity of acupoint’s area it provides interaction between internal body environments with its external surrounding.

Qi, Excess or Deficiency, Heat and Cold: We assume that ancient Chinese doctors understood the complexity of the human being and limitation of our three-dimension space. Ignoring theories about multidimensional world we can only analyze dependence of one parameter on one or two {Y = f (x, z)} simultaneously. Therefore, Chinese doctors proposed an idea, similar to cybernetic model, by which the complex system can have common managing or controlling parameter.[2] They suggested relative and universal measuring unit and gave it a name “Qi”. By means of Qi one may compare “non-comparable” signs and phenomenon, for example, height, weight, color, and time, condition of the health or disease and various therapeutic methods. This type of comparison is not made in quantitative but rather in qualitative characteristics, such as “more”, “much more”, “less”, “much less” or “equal”.

By evaluation of Qi a doctor can recognize any diseases and describe therapeutic recommendations. If patient has cough or dyspnoea, so it means that, there is a Lung disorder. If the cough is aggravated by inspiration then it means that there is an Excess

condition of Lung. If cough is aggravated by expiration then it means that there is a Deficiency condition of the Lung. In case of Excess, one should sedate points of the Lung channel and in case of Deficiency, one should reinforce points of the same channel. Neither Western diagnosis of the patient nor results of laboratory analyses and x-ray examination should be taken into account for treatment by TCM methods.

Hence, Qi is a parameter "X" in the equation {Y = f (x, z)}. As far as "Z" is concerned, we can recognize it as an intensity of heat production i.e. the basis of "Heat" or "Cold" disease symptoms. In other words, "Z" describes predominance of exothermic or endothermic chemical reactions in the human body. Therefore, if exothermic reactions prevail then disease has Heat symptoms and requires "cleaning the heat". On the contrary, if endothermic chemical reactions predominate, then disease has "Cold" symptoms and requires warming therapy. So, in TCM diagnosis it is necessary and enough to determine "Excess or Deficiency" for disease of channels {Y=f (x)} and both "Excess or Deficiency" and "Heat or Cold" for disease of organs {Y = f (x, z)}.

TAO, Yin & Yang, 5 elements: "Who knows (TAO), he does not speak (about it), who speaks, he does not know". Nevertheless, who wants to imagine mathematic model of TAO should try to divide "1" by "0" [1/0]. We also recognize the following ideas in TAO:

- One truth: there is only one true way and there is no any choice; illusion of choice means lack of understanding or knowledge as well as breach of the law.
- Preexistence: everything is in existence from the very beginning; there is no evolution, but there realization of the preexisted pattern.
- Holistic approach: DAO creates interconnected parts Yin and Yang; "separation Yin from Yang results in death", so if we study a part and omit at least one connection with the whole, it is not a part of the initial "whole" any longer, but it is already a new smaller whole.

"Yin and Yang" is a binary system of calculation and comparison. It can describe all variety of the world as well as simplify the extremely complex problem down to the choice of yes or no. Interactions between "Yin" and "Yang" are not completely antagonistic as [–1] and [+1], but there are phase transformations that are realized in the law of "5 elements". From the mathematic model point of view, "5" is the least number of elements in the dynamic system with both direct and indirect either reinforcing or sedating interactions. This system can have six, seven or more elements, but not less than five.

Etiology of Disease. In both modern western medicine and TCM etiologic factors can be divided into three main groups: genetic disorders, emotional stress and environment or external factors. Nevertheless, description of external factors in TCM arises many questions, like "What does Wind mean?" etc.

We assume that based on their huge practical experience, doctors of ancient China have analyzed all symptoms, observed while helio-cosmic factors had action on the human body, and systematized them into 5 (6) types of reaction. They drew parallels between changes of the weather and symptoms of patients and developed special terms to describe those interactions: Heat, Cold, Wind, Dampness and Dryness. By means of terms "Heat" and "Cold" they described heat production of the patient's body; by means "Dampness" and "Dryness" they described water metabolism and capacity of the body to accumulate water molecules; and by means of term "Wind" they estimated speed of changes of various parameters taking place in the patient's body.

Pathogenesis of acute diseases. About 1800 years ago, Chinese doctor Zhang Zhongjing described the main symptoms and phases of acute disease evolution in his “Treatise on Febrile Diseases Caused by Cold” (Shanghan Lun); and also wrote prescription for therapy.[3] In the beginning of the last century, H.Selye again paid attention on the general symptoms of acute diseases and published results of his study in the article “A Syndrome Produced by Diverse Nocuous Agents”.[4]

According to the both theories, any acute disease starts from activation of body resistance. Dr. Zhang Zhongjing described this phase by means of disorders of Yang Channels. H. Selye and other modern scientists revealed that acute phase is characterized by activation of sympathetic autonomic nervous system, increase of corticosteroids production and intensive consumption of carbohydrates.

At the late stage, symptoms of exhaustion can be observed. Dr. Zhang Zhongjing described this phase by means of disorders of Yin pairs of Channels. In modern studies, this exhaustion phase of acute disease is characterized by decrease of parasympathetic autonomic nervous system activity as well as insulin production and transformation of metabolism from carbohydrates to lipids.

Thus, both Drs Zhang Zhongjing and Hans Selye described the same idea of acute diseases evolution, but they presented their theories in different words.

Mechanisms, which underlay the base of therapeutic effects of acupuncture. Modern studies have formed a base of scientific understanding, of the biological and therapeutic effects of acupuncture, moxibustion, acupressure, laser- or electro-puncture.

Usually anti-inflammatory, anti-swelling, anti-allergic, pain-relief and other effects are claimed. They considered that by acupuncture one might stimulate or modulate components of the immune and endocrine system, normalizing micro-circulation and metabolism. Recently, a lot of attention has been paid to neuropeptides, including endorphins and encephalin.

Analysis of various modern studies concludes that in any case only the normalizing effects accompany any successful treatment.

Therefore, if the patient initially has increased parameters then we wait for their decrease, and if the patient initially has, decreased parameters we hope to achieve their increase. Usually treatment does not change parameters, which were at a relative norm.

The more the initial change, the more improvement after treatment may be obtained. If the patient has a small initial change of some parameters then improvement after treatment may not be statistically proved.

Conclusion: Our desire in this article is that TCM will become vital and acceptable in Western world. We hope that difference in the terms applied for description of the same ideas will not prevent TCM from its integration in the modern health care system.

References

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